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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,734	07/31/2001	Yoshinobu Hagihara	16869S-030500US	4324

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EXAMINER

BHATNAGAR, ANAND P

ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/919,734

Applicant(s)

HAGIHARA ET AL.

Examiner

Anand Bhatnagar

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 9, 10 and 13 is/are rejected.
- 7) ☒ Claim(s) 5-8, 11, and 12 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to because the elements of the graph of fig. 13b do not match the description of fig. 13b in the specifications on page 6 lines 5-9. In the specification, on page 6 lines 5-9, the graph of fig. 13b is described wherein the vertical axis is the positions of the pixels and the horizontal axis is the illuminance of the pixels while fig. 13b shows the reverse, wherein the illuminance of the pixels are on the vertical axis and the position of the pixels are on the horizontal axis. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: On page 6 (lines 5-9) of the specifications the description of fig. 13b in the specifications does not correspond to the graph in fig. 13b. In the specification the graph of fig. 13b is described wherein the vertical axis is the positions of the pixels and the horizontal axis is the illuminance of the pixels while fig. 13b shows the reverse, wherein the illuminance of the pixels are on the vertical axis and the position of the pixels are on the horizontal axis. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 10, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Leser (U.S. patent 4,459,487).

Regarding claims 1, 10, and 13: A moving object detecting and measuring apparatus formed by using a computer (fig. 5 elements 10,12, 20, and 56), including:

a first moving object detecting means having a first detecting area defined in the shape of a slit, read as segment, on an input image (fig. 2 elements 22, x sub i's, y sub i's, and z sub i's, fig. 5 elements 10,12, and 20-23, col. 1 lines 55-67, col. 4 lines 34-46, and col. 5 lines 54-63, wherein an image of the non-occluded areas, x and z segments, are obtained on the element 22, the detector/receiver. The x segment is read as the "first detecting area". The segments are read as the "slits" since a segment has a shape of a slit);

one or more second moving object detecting means having a second detecting area defined in the shape of a slit on the same straight line as the first detecting area, said second different in length from said detecting area being first detecting area (fig. 2 elements 22, x sub i's, y sub i's, and z sub i's, fig. 5 elements 10,12, and 20-23, col. 1 lines 55-67, col. 4 lines 34-46, and col. 5 lines 9-14 and 54-63, wherein an image of the non-occluded areas, x and z segments, are obtained on the element 22, the detector/receiver. The z segment is read as the "second detecting area". The segments are read as the "slits" since a segment has a shape of a slit. The x and z segments have variable lengths as shown in fig. 2); and

moving object measuring means for deciding a length of said moving object passing through said slit in a longitudinal direction of said slit according to

output of said first and second moving object detecting means (fig. 2 elements 22, $x_{sub i}$'s, $y_{sub i}$'s, and $z_{sub i}$'s, fig. 5 elements 10,12, and 20-23, col. 1 lines 55-67, col. 4 lines 23-46, and col. 5 lines 9-14 and 54-63, wherein an image of the non-occluded areas, x and z segments, are obtained on the element 22, the detector/receiver. These segments are used to determine the objects shape which is read as its length, width, etc. The segments "slits" of the light source., element 20, lie in a longitudinal direction which are parallel to the receiver/detector device, element 22.)

Regarding claim 2: A moving object detecting and measuring apparatus wherein said second detecting area includes one or more detecting areas defined by partitioning said first detecting area (fig. 2, col. 4 lines 65-67, and col. 5 lines 1-14, wherein the source illumination is partitioned into segments "slits" into first and second detecting areas).

Regarding claim 3: A moving object detecting and measuring wherein said second detecting area includes one or more detecting areas defined so as to extend from one end of said first detecting area and be shorter in length than said first detecting area (fig. 2 element $x_{sub 4}$, the first detecting area, is shorter than $z_{sub 4}$, the second detecting area. The z segments, y segments, and x segments are extensions of the main source illumination, i.e. therefore they are extensions from one another).

Regarding claim 4: A moving object detecting and measuring apparatus wherein said second detecting area includes one or more detecting area

extending from one upper end of said first detecting area, said one or more detecting areas being defined so as to be shorter than said first detecting area and be various in length (col. 5 lines 1-14 wherein the x segment "first detection area" is extending from the upper end and the second area is in the lower end and wherein the lengths of the segments vary, i.e. have different lengths wherein one is shorter or longer than the other).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagaya et al. (U.S. patent 5,721,692) and Diknis (U.S. patent 4,160,522).

Regarding claim 9: A moving object detecting and measuring apparatus using a computer, comprising:

means for inputting an video image and other pictorial images from outside (Nagaya et al.; fig. 1 elements 200, 201, and 500, col. 1 lines 3-7, and col. 6 lines 29-37, wherein video images are inputted from outside, such as of traffic);

moving object detecting means for defining an object under detection along a single straight line consisting of a base line and partitions thereof on an input video image or pictorial image and setting at least one area of interest to make a decision as to presence or absence of a moving object in an input video image or a pictorial image (Nagaya et al.; fig. 4 elements 1041 and 1042 and col. 7 lines 48-62, wherein the beta segment is read as the base line and area of interest is read as the τ region. From these two regions the object in the images is detected);

means for calculating correlation in image structure between data on said area of interest in a specific frame and image and data on said area of interest in each frame and image (Nagaya et al.; col. 7 lines 9-21 and 48-62, wherein the object structure of a moving object is correlated between the chronological frames);

detection means for deciding moving object detection events, such as presence or absence of a moving object or a change of the background image, from a pattern of correlation values of a plurality of calculated image structures (Nagaya et al.; col. 6 lines 44-57, wherein the pixels are classified as background, moving object, and/or change in the background); and

means for coding a moving object detection result output from said detection means and deciding whether a moving object has been detected or not.

Nagaya et al. discloses to detect the motion of an object in a set of images by using slits. Nagaya et al. does not teach to code the result of a moving object to see if the object has moved. Diknis teaches to code a moving object (Diknis; col. 1 lines 33-47 and col.2 lines 33-36, wherein the moving object is coded by the label on the object). It would have been obvious to one skilled in the art to combine the teaching of Diknis to that of Nagaya et al. because they are analogous in identifying moving objects. One in the art would have been motivated to incorporate the teaching of Diknis to that of Nagaya et al. in order to have a system for reliably and automatically identifying individual objects moving past a fixed reference point (Diknis et al.; col. 1 lines 27-31).

Allowable Subject Matter

5. Claims 5-8, 11, and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Davies (U.S. patent 5,329,595) for analyzing optical data of terrain.

Amemiya et al. (U.S. patent 6,584,211) for a mobile object detection apparatus.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anand Bhatnagar whose telephone number is (703) 306-5914, whose supervisor is Amelia Au whose number is 703-308-6604, group fax is 703-872-9306, and Tech center 2600 customer service office number is 703-306-0377.

AB

Anand Bhatnagar

Art Unit 2623

September 6, 2004


SAMIR AHMED
PRIMARY EXAMINER